PCPLUS★WARE™ NEWS
A PUBLICATION OF STSC, INC.

Spring 1986

POWERFUL NEW SPREADSHEET CAPABILITIES NOW AVAILABLE FOR APL★PLUS® PC

APL★PLUS PC users can now solve problems faster and easier with the release of a new Spreadsheet Manager, available immediately through local dealers or STSC.

This latest addition to the APL★PLUS PC TOOLS series brings powerful new spreadsheet capabilities to the APL environment. In addition to enjoying standard spreadsheet features, you can now also quickly and easily move data between APL workspaces and LOTUS or ASCII files.

With the Spreadsheet Manager you can:

- Create APL spreadsheets composed of both character and numeric data; and enter, modify, and review them with a flexible spreadsheet-like editor.
- Execute and store APL formulas for individual cells or ranges of cells in a spreadsheet.
- Move, copy, add, and delete areas of the spreadsheet, and store portions of the spreadsheet in workspace variables. The effect of the last deletion can be reversed by using the editor's cancel (undo) capability.
- Left-justify, center, or right-justify labels.
- Sort columns or rows of the spreadsheet.
- Store and retrieve an APL spreadsheet in a specially structured APL★PLUS PC System component file.
- Use the APL spreadsheet editor to create, review, or modify arbitrary LOTUS worksheets and ASCII files.

With the Transfer Facility you can:

- Transfer data from LOTUS spreadsheets or ASCII files into APL variables or an APL spreadsheet file.
- Transfer data contained in an APL spreadsheet or in APL variables to external sources, such as LOTUS worksheets or ASCII files.
- Embed non-interactive transfer facilities within other APL applications.

The Spreadsheet Manager is designed for the APL★PLUS PC System, Release 5 or later, and a 100% IBM-PC compatible computer. A minimum of 384K of RAM is required, with additional memory recommended for transferring large files and editing large spreadsheets.

U.S. suggested retail price for the Spreadsheet Manager is $195. To order the Spreadsheet Manager, or for a demo, contact your local dealer or STSC.

RELEASE 3.0 OF APL★PLUS UNX SYSTEM FEATURES EXTENDED CAPABILITIES

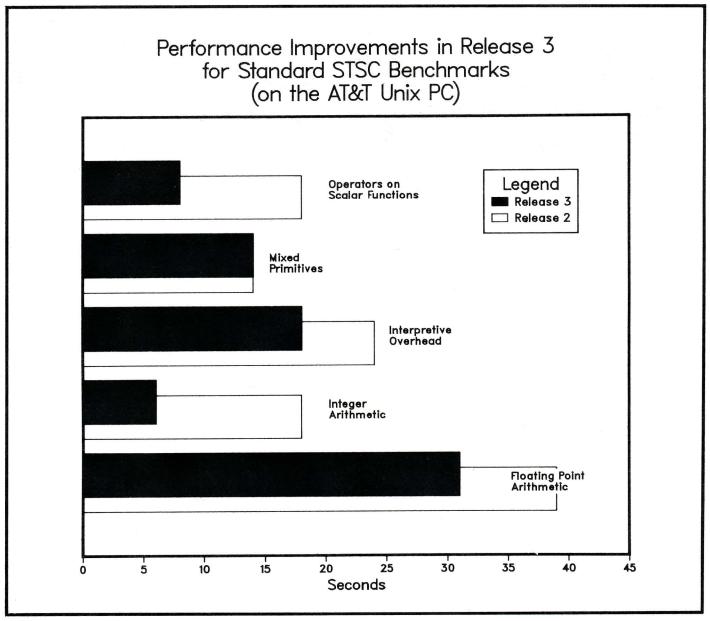
Speed-ups of at least 15 to 20 percent are among the significant improvements that have been incorporated into Release 3.0 of the APL★PLUS UNX System.

Users of Release 3.0 on computers with the Motorola 68000 family or Intel 80286 CPU chips can expect dramatic performance improvements in speed throughout the system. These improvements are illustrated in the chart on the right.

These dramatic speed improvements are only the beginning. Take a look at what else you get with Release 3.0 of the APL★PLUS UNX System:

- **Major enhancements to the session manager and full-screen editor,** which now includes block copies and deletes with string search and replace. The session manager and editor now support both text and APL keyboards.
- **The default display of nested and heterogeneous arrays** is comparable to IBM's APL2 software product and greatly improves the report formatting capabilities of the system.
- **Additional peripheral support** now allows you to redefine output translation tables for supporting devices such as DEC VT220 terminal and other non-standard displays.
- **Additional concurrent external processes** to APL to support interfaces to graphics packages, database systems, and unusual peripheral devices.

Release 3.0 is available immediately to registered users of Release 2.0. U.S. suggested retail price ranges from $150 - $2,000 depending on computer in use. To order or for more information, contact your local dealer or STSC. To expedite your order, please have your Release 2.0 serial number available for reference.



PLUS★WARE PRODUCT TRAINING SCHEDULES

APL Classes
(All classes are introductory APL unless noted otherwise)

Rockville	New York City
May 19-22 (Intermediate APL)	May 12-15 (Special Topics)
June 16-19	June 2-5 (Intermediate APL)
July 14-17	July 21-24
August 18-21	August 4-7
September 22-25	September 8-11
October 10-13	October 6-9
November 10-13	November 17-20
December 8-11	December 1-4

Fee for all classes listed is $800, which includes four days of training, all curriculum materials, lunch, and refreshments.

To register or for more information, call STSC at 800-638-6660 for the Rockville classes or (212) 984-0730 for the New York City classes.

STATGRAPHICS Training

Sponsored by Statistical Graphics Corporation, the developers of STATGRAPHICS, on July 21-23 and October 27-29.

Seminars will be held at the Hyatt-Regency Princeton or at the offices of Statistical Graphics Corporation in Princeton, New Jersey. The three-day seminar covers basic data structures, use of STATGRAPHICS expressions, using and defining function keys, and various other procedures.

Fee for the seminar is $650, with discounts offered for companies sending more than one person. To register or for more information, call Statistical Graphics Corporation at (609) 924-9374.

STSC SIGNS ACQUISITION AGREEMENT WITH CONTEL

In March, STSC signed an agreement for the management acquisition of the company from its parent corporation Continental Telecom Inc. (Contel) of Atlanta, Georgia. Under terms of the agreement, certain of STSC's current officers have become majority owners of the company.

At the signing of the agreement, William M. Gibson, STSC President and Chief Executive Officer, said, "Great strides have been made within STSC during the past three years in developing and marketing a number of quality software products. As a result, we are facing the future as a profitable, growing, and vibrant organization. This acquisition reflects our confidence in both STSC and the computer software and services industry in which we compete."

Patricia A. Buteux, Senior Vice President, APL Software Products, added, "We've recently combined our APL mainframe and microcomputer software groups into one division. This move strengthens the team of professionals working to provide the best possible APL technology for our customers.

"And, in the microcomputer industry, STSC's success as a software publisher will enable us to continue our commitment to provide our customers with quality products to meet their business needs."

In addition to Buteux, the management team for the newly created APL Software Products Division includes J. Stephen Schiavo, Vice President, Sales; Virginia E. Marshalek, Director, APL Marketing; James G. Wheeler, Director, Core Technology Development; Barbara A. Schick, Director, Applications Marketing; and Joyce E. Maker, Manager, New Applications.

STSC AND INTERNATIONAL DEALERS TO DEMONSTRATE LATEST PRODUCTS AT APL86

STSC, in keeping with the "APL In Action" theme of the upcoming 1986 International APL Conference, will demonstrate the latest features available in the PLUS★WARE product line.

APL86 is scheduled for July 7-11 in Manchester, England, at the University of Manchester Institute of Science and Technology.

Many STSC dealers will be on hand to demonstrate the new features and benefits of several just-announced releases—including the Spreadsheet Manager and APL★PLUS UNX Release 3.0. STSC's new APL mainframe compiler and several tools for the APL2 environment will also be exhibited.

All APL users are encouraged to attend APL86 to learn about the latest in APL technology. Three of STSC's APL experts, Clark Wiedman, Jim Weigang, and James Wheeler are among the many speakers who will present papers and lead panel discussions.

To register for APL86 or for further information, contact BISL Conference Department (APL86), The British Computer Society, 13 Mansfield Street, London W1M OBP, England.

PC PLUS★WARE NEWS

PC PLUS★WARE NEWS is published four times a year by STSC, Inc., and is distributed free of charge to registered licensees of the APL★PLUS PC System and STATGRAPHICS.

Comments regarding the newsletter should be sent to PC PLUS★WARE News, Editor, STSC, Inc., 2115 East Jefferson Street, Rockville, Maryland 20852.

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PLUS★WARE PRODUCT INFORMATION LINES

Orders	**800-592-0050**
Product Information	**301-984-5123**
Technical Support (HELP Line)	**301-984-5489**
Software Submissions	**301-984-5442**
Telex	**898085**

by Ralph Fox
Product Development Manager

Screen Window Input

The new system function ⎕*WIN* is one of the most powerful features in Release 5 of the APL★PLUS PC System. Designed to permit character input into multiple highlighted screen windows without incurring the performance penalty of keystroke-by-keystroke analysis, ⎕*WIN* (along with its companion system functions ⎕*WGET*, ⎕*WKEY*, and ⎕*WPUT*) embodies as much capability as some entire forms input packages.

The design of ⎕*WIN* is compact— a few mixed parameter lists are used rather than a host of additional system variables—so it's best to learn ⎕*WIN* by experimenting with several simple cases.

The following list of common screen input program elements indicates how those requirements are managed by the system functions ⎕*WGET*, ⎕*WIN*, ⎕*WKEY*, and ⎕*WPUT*. (Refer to *APL★PLUS PC System Functions* for complete information about the syntax and arguments of these system functions.)

- Initial screen text—written by ⎕*WPUT*.
- Initial screen attributes (colors and highlights)—set by ⎕*WPUT* or, for the input windows only, set by ⎕*WIN*.
- Input window locations, types, behaviors, and attributes—set by the right argument to ⎕*WIN*.
- Initial cursor position on screen—set by the left argument of ⎕*WIN*.
- "Deadman" timeout between keystrokes—set by the left argument of ⎕*WIN*.
- Keystroke behavior—set by ⎕*WKEY*.
- Cause of termination of input—in the result of ⎕*WIN*.
- Location of cursor upon termination—in the result of ⎕*WIN*.
- Fields (input windows) modified—in the result of ⎕*WIN*.
- Input data—read by ⎕*WGET*.

An input program normally writes to the screen with ⎕*WPUT*, sets any non-default keystroke behavior with ⎕*WKEY*, and calls ⎕*WIN* to gather keystrokes. Some keystrokes cause ⎕*WIN* to terminate. The program examines the result of ⎕*WIN* to determine the type of exit. Depending on the application and screen layout, some exits may require special processing and then an immediate re-execution of ⎕*WIN* with the same window locations.

Other exits may signal that input is complete and that ⎕*WGET* is to be used to retrieve (and validate) the input. Invalid input requires a diagnostic message and a return to ⎕*WIN*. Valid input may move the program on to the next input screen or to a restoration of the original screen and keystroke definitions.

Example

A defined function *IP* has been the workhorse "input primitive" in traditional collections of input utilities. It normally uses quote-quad output to issue a prompt and then quote-quad input to gather a response. When used on the PC, this function does not use screen attributes or recognize the Esc key and other Ctrl-key or Alt-key combinations that have become common in PC software.

Attempts to replace quote-quad input with ⎕*INKEY* or ⎕*ARBIN* in order to include commonly used keystrokes have required programmers to analyze each keystroke and manage the backspacing and cursor movements that was previously handled by ⍞. Now ⎕*WIN* provides the best of both worlds—recognition of any keystroke combination as well as input line editing handled by the APL system.

A new, screen-based version of *IP* that recognizes any exit keystrokes is displayed below. Note that since it is ambivalent, it can probably be used as a direct substitute for the older version of *IP*.

```
    ∇R  E  IP  P;A;D;K;N;S;T;U;V;W;X;⎕IO;⎕SEG
[1] ⍝   response ← [exitkeys] IP prompt
[2] ⍝   Display prompt at cursor and return
[3] ⍝   response unless any of optional exit keys
[4] ⍝   pressed (Esc=438, PgUp=392, PgDn=421, etc.)
[5] ⍝   Normal terminator is Enter; assumes prompt
[6] ⍝   and response fit on rest of current line
[7]   ⎕IO←0 ◇ ⎕SEG← ⍬ ◇ T←13 ⍝ add terminators
      here
[8]   →(2=⎕NC 'E')⍴L1 ◇ E← ⍬ ⍝ no exit keys if
      monadic
[9]   L1:D←K←⎕WKEY N←⍳512 ⍝ save existing key
      codes
[10]  D[(D=¯1)/⍳⍴D]←¯255 ⍝ disable current exists
[11]  D[T,E]←¯1 ◇ X←D ⎕WKEY N ⍝ set new ones
[12]  ⍝ Set up 3 windows:   U ←→ entire line
[13]  ⍝ V ←→ portion with prompt
[14]  ⍝ W ←→ portion with response
[15]  ⎕IO←1
[16]  U←V←W←⎕CURSOR, 1, 80-⎕CURSOR[2]
[17]  W[2 4]←W[2 4]+ 1  ¯1 × V[4]←⍴P←,P
[18]  S←U ⎕WGET 3 ⍝ save existing sceen line
[19]  V ⎕WPUT P ⍝ display prompt
[20]  ⍝⍝⍝ W ⎕WPUT ' ' ⍝ perhaps clear input area
[21]  A←⎕WIN W, 1 0 ,2⍴⎕PEEK 170 ⍝ allow input
[22]  →(0=1↑A)⍴L2 ◇ R←A ◇ →L3 ⍝ unexpected result
[23]  L2:R←A[2] ◇ →(~R∈T)⍴L3 ⍝ return exit key
[24]  X←' '≠R←,W ⎕WGET 1 ⍝ return input chars
[25]  R←(⍱v\⍱X)/R ⍝ delete trailing blanks
[26]  L3:X←K ⎕WKEY N ◇ U ⎕WPUT S ⍝ restore keys,
        scrn
    ∇
```

Now if you execute

```
NAME←438 481 483 IP 'Enter name:
```

the result will be either a character vector or the numeric scalar 438, 481, or 483 (indicating that you pressed Esc, Alt Enter, or Ctrl Enter, respectively). As illustrated, *IP* provides only limited ⎕*WIN* capability, but is a good starting point for exploring extensions to multiple-field input.

Other illustrative examples of ⎕*WIN* usage can be found in the *INPUT* workspace that was distributed with Release 5. Examine the functions *sMENU* and *sINPUTFIELDS* for typical ⎕*WIN* usage.

(continued on next page)

Keystroke Numbers

The following table contains a list of commonly used key combinations and their corresponding keystroke numbers relevant for □*WIN* and □*WKEY*. You can obtain other combinations from the numeric result of □*INKEY* (that is, after setting 1 □*POKE 255*).

Key	Unshifted	Shift	Alt	Ctrl
Enter	13	13	481	483
Del	432	46	—	412
Ins	433*@	48	433*	413
End	388	49	363	370
Down (↓)	420	50	364	261
PgDn	421	51	365	371
Left (←)	391	52	360	258
Here (Num5)	366	53	361	369
Right (→)	389	54	362	257
Home	394	55	357	367
Up (↑)	393	56	358	259
PgUp	392	57	359	368
Tab	424	425	—	425
ScrollLock	427	427	427	—
CapsLock	428	428	431#@	—
PrtSc	436	179@	—	434@
Backspace	437	437	437	349
Esc	438	438	438	—
NumLock	484#	484#	335	430

Notes:

- This table of keystroke numbers applies when using the Unified keyboard. Numbers marked "@" cannot be captured with □*INKEY* but can be used with □*WIN*.
- Differences for the APL keyboard are:

  (*) Ins has value 433 while Alt Ins cannot be captured with □*INKEY* but has value for 324 for use with □*WIN*.

  (#) Alt CapsLock has value 484; NumLock and Shift NumLock cannot be captured with □*INKEY*, but both have value 431 for use with □*WIN*.
- The documentation for □*PFKEY* mentions the key values 440 through 459 and 470 through 479 for the Unshifted, Shift-, and Ctrl- programmed function key combinations. □*WIN* does not recognize undefined (empty) function keys and these values cannot be used with □*WIN*. Instead, the values of keystroke combinations you install on the programmed function keys are recognized by □*WIN*.
- The Alt- programmed function keys are recognized by □*WIN* and correspond to 460 to 469, respectively.

Fast Functions Revisited

After the discussion of the assembler-based utility functions from the ASMFNS workspace appeared in the Winter 1986 issue of PC PLUS★WARE NEWS, several readers suggested ways to obtain an efficiency improvement. The functions are distributed with the assembler object code embedded within them for ease of copying, but that function style introduces non-trivial interpretive overhead for the analysis of function lines containing long strings of integers. If you move the assembler code into a global variable and reference that variable within the function, the assembler utility should significantly out-perform the corresponding APL utility for all arguments, regardless of size.

Wanted: Treasure Chest Contributions

Future Treasure Chest articles will continue the discussion of □*WIN* and the other new features found in Release 5 of th APL★PLUS PC System. Anyone willing to share their favorite idioms based on □*WIN*, □*INBUF*, ⊆, dyadic ~, or the assembler utilities, are encouraged to send them to STSC, attention PC PLUS★WARE NEWS. Subsequent issues will present the most interesting of the submitted discoveries.

STSC PRODUCTS RECEIVE 'MILLION-DOLLAR AWARDS'

Three STSC software products were recently recognized at the annual "ICP Million Dollar Awards" ceremony. The awards program, sponsored by International Computer Publications, Inc., honors outstanding achievements in the software industry.

STSC's APL★PLUS PC and APL★PLUS Mainframe software products each received a "Five Million Dollar Award" for achieving $5 million in sales since introduction.

STSC's third ICP award was for STATGRAPHICS, which qualified for the "Million-In-One Award" by achieving over $1 million in sales in its first year on the market. The APL★PLUS PC System received a similar "Million-In-One Award" in 1983, the year the product was introduced.

In addition to the three product achievement awards, STSC sales representative Najib Kabbani received a "Super Software Seller" award for individually achieving over $1 million in software sales in 1985.

APL PRESS

APL QUOTE-QUAD: THE EARLY YEARS

APL Quote-Quad: The Early Years, is a collector's item for both veteran and new APL users alike.

The publication is an interesting and practical compilation of articles, technical papers, and correspondence documenting the development of APL technology from 1968 to 1972.

Included are numerous programming notes, functions, APL algorithms, and bibliographies. Many of the technical notes and problem-solving sections are still valuable today to gain insight into the richness of the APL language.

APL Quote-Quad: The Early Years also provides a valuable capsule history of the efforts of the early APL community to share information, to get organized, and to provide a formal forum for APL users.

APL Quote-Quad: The Early Years sells for $35. To place an order, or for a complete catalog of all APL Press publications, contact APL Press, 2115 East Jefferson St., Rockville, Md. 20852. Or call (800) 592-0050. In Maryland or Canada, (301) 984-5129.

STSC PUBLISHING PROGRAM TURNS SOFTWARE INTO PROFITS

Recognizing the wide variety of quality applications being developed by STSC customers, STSC is extending a special invitation for all application developers to submit their software for possible inclusion in STSC's Software Publishing Program.

According to Joyce E. Maker, Manager, New Applications, STSC's recent application story contest showed that STSC customers are involved in a wide range of software applications that could be commercially very successful and profitable.

"Many independent software developers are finding that having a technically superior product is sometimes not enough," Maker said. "That's where our Software Publishing Program comes in—we can provide authors with the marketing and distribution support necessary to market and sell their software to the largest potential audience."

Software accepted for publication by STSC receives complete publishing and distribution services, including quality assurance, documentation, packaging and production, advertising, promotion, sales, and customer support.

Authors benefit from advantages such as:

- Increased distribution opportunities through an international dealer network which includes over 1000 dealers and distributors.
- A team of more than 40 marketing and technical professionals who combine talents to ensure that the product is as successful and profitable as possible.
- More resources for aggressive advertising and promotion.

According to Maker, STSC is interested in a wide variety of business applications for the IBM PC and compatibles environment. The software may be written in any programming language.

Every application submitted to STSC's publishing program undergoes a comprehensive and complete evaluation. In addition, regardless of whether the software is accepted for publication, STSC offers the author the option to list the product in the Independent Software Catalog published quarterly in PC PLUS★WARE News.

A free copy of STSC's Software Submission Guide, which includes programming and documentation guidelines, is available by contacting STSC, 2115 East Jefferson Street, Rockville, MD 20852. For more information, call Joyce Maker at (301) 984-5205.

INDEPENDENT SOFTWARE CATALOG

This catalog provides a summary listing of application and utility software available from third-party developers. These products have not been tested by STSC and their inclusion in this catalog does not constitute an endorsement or recommendation by STSC.

ACQMAN

Designed to enable purchaser of capital assets to optimize means by which to finance them. Includes capability to compare lease vs. purchase, and to test unlimited number of different financial strategies. For IBM PC and compatibles. *Price: $5,000. Contact: A.J. Associates, 156 Keeler Drive, Ridgefield, CT 06877. (203) 797-8163.*

APL2C Interface

Allows APL programmers to compile, load, and execute 'C' programs from APL★PLUS PC System. Allows programs to run up to 10 times faster. Package includes 'C' compiler, library of 'C' routines to send and receive data to and from APL, and APL workspace which demonstrates the techniques used. *Price: $195. Contact: Lauer Software, 117 East Burgundy Lane, Newtown, PA 18940. (215) 860-9764.*

APL★DBMS

File creation and retrieval system. For IBM PC and compatibles. *Price: $40. Contact INFO★PLUS, P.O. Box 91030, Johannesburg, South Africa 2006. (11) 726-8572.*

APL★WORD

Text editor and processor. Text processing performed with dot commands based on IBM's DCF. Handles APL text. For IBM PC and compatibles. *Price: $50. Contact INFO★PLUS, P.O. Box 91030, Johannesburg, South Africa 2006. (11) 726-8572.*

APL Function File

Provides convenient storage and retrieval of unlocked APL functions in an APL★PLUS PC environment. For IBM PC and compatibles. *Price: $30. Contact: Donald Latour, 172 DuBois Avenue, Sea Cliff, NY 11579. (516) 671-6712.*

CEICAM System

Handles anticipated foreign currency funds flow system and foreign currency balance sheet exposure system for multinational corporations. For IBM PC, XT, AT and compatibles. *Price: $5,000. Contact: CEICAM Corporation, 360 East 55th Street, New York, NY 10022. (212) 752-5599.*

Computer & Communications Industry Trade Press Indexing System

Software and database of information on over 40 computer and communications industry trade press publications. Database contains citations to over 2,000 supplier indexes. Diskette of citation data delivered monthly. Support and supplier proficiency reports prepared from the database twice a year. For IBM PC and compatibles. *Price: $795. Contact: The Strategist, Inc., P.O. Box 81, Visalia, CA 93279. (209) 625-4598.*

Corporate Consolidation Manager

Menu-driven financial reporting system. Features automatic consolidation of four-dimensional, user-defined organizational structures, custom reporting, integrated color graphics, and data transfer from mainframe to PC and PC to PC. For IBM PC and compatibles. *Price: $1,500. Contact: LP Software, Inc., 400 Cross Keys Office Park, Fairport, NY 14450. (716) 223-1873.*

General Ledger (GL-ON LINE)

APL-based double entry set of books for small business, proprietorship, or corporation. Gives financial statements in IRS tax return format and detail trial balance. Menu-driven, runs on STSC's APL★PLUS PC. For IBM PC and compatibles. *Price: $50. Contact: Custom Computer Modeling, P.O. Box 434, Gloucester Pt., VA 23062. (804) 642-6864.*

OVERLAYS

A machine language program callable by APL functions which packs together any number of APL objects (functions and/or variables) into a single APL variable (an overlay). Unpacking an overlay instantly redefines its constituent objects in the workspace. Overlays are a much more natural way of organizing data on files. Large applications no longer reside in may workspaces but rather as components on files. Workspaces are no longer needed. For IBM PC and compatibles. *Price: $200. Contact AMD Informatics, CP 1222, Haute Ville, Quebec, Canada G1R 5A7 (418) 687-9656.*

THERM: A Workspace for Thermal Modeling

A general thermal network modeling tool that solves energy problems from simple heating load calculations to hour-by hour simulations. A unique applications package that reveals rather than conceals the physics and thermal modeling by using a combination of menus and editors built around basic thermodynamic relationships. Editors provide access to established libraries of data values. For IBM PC and compatibles. *Price: $650. Contact: ARC-SOFT, Inc., 501 Prince George Street, Williamsburg, VA 23185. (804) 220-0020.*

UNITAB

A spreadsheet-like full screen data entry and validation system with features to ease data entry and editing. The user determines size, location, colors, etc., of the spreadsheet through parameters. For IBM PC and compatibles. *Price: $195. Contact UNIWARE, 8 Rue Boileau, 75016 Paris, France. (1) 527 20 61.*

Q & A

Q. Why do I sometimes get the message 'DRIVE NOT READY' when I execute ⎕*LIBS?*

A. You have constructed an APLLIBS file which does not contain a reference to drive 0. To determine ⎕*LIBS,* APL asks DOS what the current directory is. DOS performs a physical disk access and returns the error message to APL when the drive door is opened or no disk is in the drive. If no APLLIBS file is in effect, ⎕*LIBS* simply returns the drive letters for each physical drive. No attempt is made to determine the actual current directory.

Q. How can I stop the full-screen editor from only using the rows selected by ⎕*WINDOW?*

A. To turn off this Release 5.0 feature, type the following when you are in APL:

⎕*SEG* ← ' ' ◇ *0* ⎕*POKE 264.*

Q. How can I use COM2 for communications?

A. In APL★PLUS PC, Release 5.0, you can select COM2 as the communications port by entering APL using:

apl e=256.

Q. My APL usage requires large workspaces, very large arrays, and a lot of number crunching. Is there a desktop system with more capacity than my current PC AT?

A. The APL★PLUS UNX System running on an AT&T UNIX PC is becoming more popular with "heavy duty" APL users. On the AT&T computer, you can have workspaces of several megabytes, with no limit on the size of arrays. The hardware costs about the same as an IBM PC AT, but the APL★PLUS UNX System is much faster for processing large variables. Other more expensive desk top machines such as the Sun-3 and Hewlett-Packard 310 offer still greater performance.

Q. Is there a way to reduce disk storage space used by a STATGRAPHICS data file?

A. Yes. STATGRAPHICS manages files in a way that allows you to increase the size of a variable or add new variables to a f without worrying about how the data is physically stored on the disk. Over time, this can result in unused space, making the file larger than necessary. You can reclaim this unused space by using the COPY facility in the "Write to STATGRAPHICS file" procedure. See pages 9-21 and 9-22 of your *STATGRAPHICS User's Guide* for details.

Q. How do I use the unified keyboard?

A. Enter APL by specifying *apl k = u.*

PC HELP LINE NEWS

As an ongoing service to help enhance the productivity of your PLUS★WARE products, STSC offers free software kits. The latest offerings include:

- **Patches to STATGRAPHICS, Version 1.3 and APL★PLUS PC, Version 5.2.** These patches repair edge conditions you may have encountered. The patches for STATGRAPHICS are available only as an "add-on" to current users of Version 1.1 or later.

  To order these free patches, send a blank formatted disk for each patch you want, with a note requesting which one you want. Also include the name and version of the PLUS★WARE product you have and your system serial number. Send to PC Help Line, STSC, 2115 East Jefferson Street, Rockville, MD 20852. Please be sure to send in yo registration card if you haven't done so yet.

The PC Help Line is open daily from 10 a.m. to 6 p.m., Eastern Time. We try to return all phone calls the same day when possible. However, if you call after 5 p.m. and if the phone lines are extremely busy, we may not be able to return your call until the following day.

PCPLUS★WARE™NEWS

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Rockville, Maryland 20852

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